

APPENDIX 15

Previous comments, omissions or deficiencies on the Application to MARAD

Note: These comments are NOT on this October 2008 version of the Application, but were made on previous versions of the Application and reefing Plan.

From: Zoe.Washnis@dot.gov

To: divetech@candw.ky

Sent: Friday, January 27, 2006 12:41 PM

Subject: Application Deficiencies

The following are deficiencies found in the application that need to be corrected and/or updated for the application to proceed.

- A. Identification of the specific vessel (Kittiwake) requested for sinking as an artificial reef. This was not included in the original application.
- B. Identification of the major contractors (project managers, shipyards, towing companies, naval architects, marine engineers, HAZMAT remediation and disposal companies). This was not included in the original application.
- C. Submittal of the description of the selected sinking site including latitudinal and longitudinal coordinates. Multiple sites were included in the original application. Please specify one applicable site.
- D. Location and description of the vessel preparation facilities. Please update application.
- E. Copies of all local, state and federal applications/permits required including the London Dumping Convention and the Coastal Works permits issued by DoE as specified in the original application.
- F. The application referenced using the Navy to tow the vessel from the fleet to the cleaning facility. This item is incorrect and needs to be updated.
- G. A signed "Certification" is a requirement of the application under Part X and was not included in the original application.
- H. Submittal of a detailed cost breakdown and project schedule of all major milestones required for the preparation to reef the vessel, including remediation and disposal of hazardous materials, tank cleaning and structural modifications. The combined cost estimate for the preparation process and project schedule submitted by Dominion Marine Group (DMG) was not sufficiently detailed. MARAD is looking for a detailed sequence of activities and milestones, from removal from the fleet to sinking at the final destination that indicates that all parties involved in the project know how to successfully tow, clean and prepare the vessel and sink the vessel.
- I. Submittal of a detailed vessel sinking plan including the proposed methodology for sinking the vessel, i.e. with or without explosives and the accompanying safety plan with appropriate contingencies for the protection of sea life in the sinking zone.
- J. Identification of any and all regulatory permits necessary for sinking the vessel including their current status, expiration dates and proposed Cayman government action should the permits expire in the next two years.
- K. Proposed schedule for the acquisition of all project insurance and sureties required by any permits or regulatory agencies.
- L. Identification of all regulatory agencies requiring an inspection of the vessel prior to sinking and a description of their methodology for verification of compliance including a Cayman government signature of approval at the end of the preparation of the vessel.
- M. Submittal of statement of availability documentation which attests that all proposed funding is in place to cover all aspects of the project. Provide expiration dates of any funding sources and the proposed Cayman government action should the funding sources expire in the next two years.

- N. Submittal of a detailed PCB sampling plan to be included in the vessel cleaning plan that follows the requirements of the EPA, draft best management practices for the preparation of a vessel for artificial reefing.
- O. Details of the retrofitting of the Kittiwake during the 1980's as requested by the EPA (Peter Gimlin). If applicable.
- P. Characterization of the paints onboard the vessel as requested by the EPA (Peter Gimlin).
- Q. Blueprints/diagrams noting the condition of the vessel when it will be sunk with detailed hull and structural modifications as requested by the EPA (Peter Gimlin).
- R. Submittal of a towing plan including vessel surveys necessary for preparing and towing the vessel from the James River Reserve Fleet (JRRF) to the cleaning facility and from the cleaning facility to the sinking site.
- S. Submittal of a post sinking monitoring plan describing those activities as required by any regulatory agencies and or permits.

In addition MARAD will require specific deliverables as part of the contract that must be submitted after contract award and prior to the actual transfer of the vessel to the Cayman Island Government. These include the following items.

- A. Submittal of a performance bond or surety for coverage in the amount of \$250,000.00 that will remain in force until the actual sinking of the vessel.
- B. Submittal of U.S. Coast Guard dead ship tow approval to tow the vessel from the fleet to the cleaning facility and from the cleaning facility to the sinking site including submittal of a Loadline Exemption Certificate.
- C. Submittal of towers certificates of insurance indicating coverage for the tugs towing the vessel both from the fleet site to the cleaning facility and from the cleaning facility to the sinking site.
- D. Submittal of a vessel afloat monitoring plan which outlines the security that will be in place to insure the safety of the vessel at all times from the time the vessel departs the fleet until its actual sinking.
- E. Submittal of a liquid load ballast plan which provides the methodology to transfer liquids onboard the vessel and/or ballasting the vessel to the required trim and stability resulting from an authorized Marine Surveyor's trip and tow survey.
- F. Submittal of certificates of General Liability insurance from the cleaning facility indicating appropriate coverage for worker health and safety and environmental protection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

Michael Carter
US Maritime Administration
Office of Environment
MAR-410, West Bldg, Mail Drop #1
1200 New Jersey Ave SE
Washington, DC 20590

May 29, 2007

Subject: Cayman Islands Tourism Association's Application to MARAD for Vessel Title Transfer of the ex-USS Kittiwake to be sunk as an Artificial Reef

Dear Mr. Carter:

Thank you for the opportunity to review and provide comments on the ex-USS Kittiwake (Kittiwake) vessel-to-reef project, the U.S. Maritime Administration's (MARAD) official pilot project for the transfer of a ship to a foreign government, specifically, the Cayman Islands Tourism Association (CITA). **Please note that this should be the Cayman Islands Government, not the CITA as the official transferee. As per MARAD requirements, the ship must be transferred to a foreign Government. CITA is the project manager and liaison for all matters related to the Kittiwake Project. We do not require any revisions to these comments; this is stated only for your information** for the purposes of creating an artificial reef in waters off the Cayman Islands. The U.S. Environmental Protection Agency (EPA) would support this project if the applicant and/or its contractors complete all of the outstanding efforts explained in CITA's application materials, as well as the actions that EPA presents in Attachment 1 to this letter. Attachment 2 provides additional details explaining the comments in Attachment 1.

EPA's review and comments are premised on the proposed use of the vessel as an artificial reef, the condition of the vessel prior to the applicant having cleaned/prepared the vessel in a manner that complies with relevant environmental protection requirements, assurances that CITA and/or its representatives obtain and comply with all relevant permits/approvals, and that final inspections will be conducted by the Cayman Islands Department of the Environment and the Cayman Islands Shipping Registry, as well as MARAD, EPA, and the U.S. Coast Guard (as required and requested) prior to the vessel's departure from Norfolk, Virginia, to the Cayman Islands. Please be aware that EPA's support for this project, even if the applicant or its contractor completes the activities in the application as well as the Attachments, does not and cannot waive the Agency's responsibilities or discretion in the enforcement of any violations of the environmental laws administered by EPA.

EPA understands, and is encouraged that, the various permits and approvals will not be available for the reefing of the Kittiwake until the Cayman Islands Department of the Environment is satisfied that the final inspections ensure that no hazardous materials or debris remain on the vessel, that hull cleaning

has been completed, and that no perceptible environmental hazards to the Cayman Islands marine environment remain.

According to the application information, all vessel cleanup/remediation activities to the 251 ft. Submarine Rescue Vessel ASR-13 will occur in the United States. Only final diver safety cut outs and sinking will be conducted in the Cayman Islands. Further, the application indicates that vessel cleanup will meet the standards and requirements of the Cayman Islands Department of the Environment which include preparing the Kittiwake to meet the joint EPA/MARAD guidance document, *National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs (BMP Guidance)*, May, 2006 (71 FR 27716). CITA's application included the draft *BMP Guidance* as an appendix; however the draft version has been revised and a final guidance document has been released. Therefore, preparation and cleanup/remediation of the vessel according to the final, rather than the draft, *BMP Guidance* is critical to EPA's support for this project. **This will be changed in the Application to MARAD and The Reefing Plan to reflect the current released version of the BMP Guidelines. CITA was not aware of the final released version of the BMP at the time of our last submission, but have since obtained a copy, reviewed it and are able to comply with it.**

With regard to the Kittiwake's polychlorinated biphenyls (PCB) remediation, under the Toxic Substances Control Act (TSCA) section 6(e), EPA prohibits the export of any PCBs **(we assume that you mean any PCBs \geq 50 ppm, not any PCBs)** without an exemption (40 CFR §761.97). Accordingly, it will be necessary for all PCBs at concentrations of \geq 50 ppm, or spilled from sources \geq 50 ppm, to be removed from the vessel before it can be exported; otherwise the exporter must petition EPA under TSCA §6(e)(3)(B) for an exemption, and EPA must grant that exemption by rule before the vessel can be exported. In past discussions with MARAD, EPA has understood that the removal of all non-liquid PCB material from a vessel is highly problematic, particularly with regard to maintaining vessel seaworthiness. In order to ensure compliance with this regulation, MARAD, CITA and its contractor Dominion Marine Group (DMG) should remove all untested materials suspected of containing PCBs, including liquids and non-liquids. EPA's National Program Chemicals Division is willing to meet with MARAD, CITA and DMG to provide technical support on any aspects of PCB remediation. **Our remediation plan calls for the removal of all liquids and solids that are 'suspect' of containing PCB, using the BMP guidelines for identification of suspect materials. This applies to all solid and liquid materials and includes the removal of all cable insulation, rubber and felt gaskets, thermal insulation material including fiberglass, felt, foam and cork, voltage regulators, switches, reclosers, bushings and electromagnets, electronic equipment, switchboards and consoles, adhesives and tapes, caulking, rubber isolation mounts, foundation mounts, pipe hangers, plastics, oil used in electrical equipment and motors, anchor windlasses, hydraulic systems, transformers, capacitors and electronic equipment with capacitors and transformers inside and fluorescent light ballasts.**

The exception to removal of all PCB's will be isolated solely to the paint on the Kittiwake, in which case $PCB \geq 50$ will not be allowed to be imported. All paint has been sampled and subsequently re-sampled in the one 'hot spot' of sample #67. An updated Remediation plan has been included as Attachment 1, including the removal of the material surrounding the contaminated area, with the material treated as PCB contaminated material.

We have evaluated the removal of all materials as noted above and do not anticipate any issues with regards to the seaworthiness of the Kittiwake subsequent to this removal.

Our post remediation inspection and sampling plan has been updated to reflect a new post-remediation third party independent inspection, sampling, analysis and report on all hazardous material, including the paint, as per the request of EPA. This updated plan is from Environmental Profiles Inc. (EPI) and included as Attachment 2, along with the detailed methodology of how the samples will be collected as Attachment 3. Please note that this proposal has been expanded to include not only the inspection and report on the paint, but a complete ship wide inspection and report on all PCB's and other solid haz mats.

We will not be applying for an exemption under TSCA, as no materials that contain PCB \geq 50 ppm will remain on board the Kittiwake prior to export. Paint samples of $<$ 50 ppm will be allowed to remain onboard the Kittiwake. The final report from EPI will be sent to EPA as well as MARAD and the CIDOE prior to export.

One other matter regarding PCBs: CITA's correspondence to MARAD (May 18, 2005) states that the approach to address PCBs exceeds that of the *BMP Guidance* and that "we have a rigorous plan, with a zero PCB requirement, as no PCBs can be imported into the Cayman Islands per our environmental requirements." Because the Cayman Islands' PCB requirement might prohibit the import of any PCBs regardless of concentration, that requirement would generally be more stringent than the current U.S. regulations at 40 CFR §761.97(a). EPA would focus on achievement of this U.S. federal standard, rather than the Cayman Islands standard.

The CI Department of the Environment (CIDOE) accepts the US standard that no PCB's can be imported that are \geq 50 ppm, which is a revision to our previous statement of no PCB's. Our intention in stating that we exceed the BMP Guidance is summarized as "We will remove all liquid and solid materials that could potentially contain PCB's hence exceeding the BMP Guidelines. Only paint that is found to be $<$ 50ppm of PBC will be allowed to remain on the Kittiwake."

EPA intends to conduct at least two (2) vessel walkthroughs relating to the *BMP Guidance* cleanup goals – one prior to cleanup/remediation activities and one prior to the vessel's departure from Norfolk, Virginia, to the Cayman Islands. In order to verify vessel cleanup/remediation, EPA would request thorough documentation as to how the *BMP Guidance* cleanup goals were achieved. This initial walkthrough also should help facilitate final review of documentation supporting completed cleanup/remediation and expedite the final walkthrough of the vessel once cleanup/remediation efforts are completed. The Cayman Islands encourages and supports these walkthroughs and inspections. The documentation that is requested will be provided in terms of the process in our revised application to MARAD, and final documentation will be provided to MARAD, EPA and the CIDOE both during and following remediation work, including but not limited to names and licenses for sub-contractors used and permitted to handle hazardous waste, disposal facilities, manifest for all hazardous materials handled and removed, procedures on all liquid cleaning processes after removal, ballast water used and where stored and the like.

Should you have any questions or need further assistance, please contact Laura S. Johnson, Artificial Reefs Team Lead, at 202-566-1273. For PCB issues, please contact Lynn Vendinello, Chief, Fibers and Organics Branch, National Program Chemicals Division, at 202-566-0514.

Sincerely,

/s/

Dave Redford

Chief, Marine Pollution Control Branch

Attachments

cc: Paul Cough
Craig Vogt
Maria Doa
Lynn Vendinello
Bill Muir
Laura S. Johnson
Curt Michanczyk

Kristine Gilson
Zoe Goss

**Attachment 1. Terms and Conditions for EPA Concurrence of the ex-USS Kittiwake
Vessel-to-Reef Project**

EPA supports this pilot project for the transfer of a MARAD ship to a foreign government for the purposes of creating an artificial reef if the following actions are completed and the appropriate documentation is sent to EPA for review and approval (as relevant) prior to the ex-USS Kittiwake's (Kittiwake) departure from the United States to the Cayman Islands:

- Documentation of how the completed vessel preparation/cleanup achieved each cleanup performance goal in the May, 2006 *BMP Guidance* document. This documentation should be accompanied by certification that the vessel was inspected by a qualified professional who can verify compliance with CITA's vessel preparation plan and achievement of the May, 2006 *BMP Guidance* cleanup performance goals.
 - Remediation/Abatement records provided in CITA's application that are out-dated or expired should be updated. The Remediation/Abatement records for all materials removed will be provided to EPA, MARAD and CIDOE. Our use of outdated records as supplied by MARAD was only to create a baseline to estimate the total work efforts and costs to remediate the Kittiwake. The hazardous material inventory on the Kittiwake that was included in our Nov 2006 application was from Navy records from a decade ago that gave us a base line to start with and can be used as one source of documentation. As per the Reefing Plan prepared by DMG, DMG will provide copies of all hazardous waste manifests to the CITA. These remediation/abatement records (once completed) will be provided to the CIDOE, US EPA and MARAD as also noted on page 24 of the Application to MARAD. Additionally, the final reports from EPI will be provided to all parties.
 - All work conducted under the vessel preparation plan by the primary contractor and all subcontractors needs to comply with all applicable federal laws and regulations related to environmental protection. The CITA will provide updated copies of all licenses for Companies their personal and/or subcontractors. This is addressed in our original reefing plan but will be updated for clarity in Section 6, Appendix A, Appendix B and Appendix D of the Reefing application. We commit to using only qualified, licensed and approved contractors and subcontractors for the handling of any hazardous materials. Copies of current licenses for all personal will be provided to EPA, MARAD and the CIDOE in advance of any work being performed. URS Corporation is a subcontractor to DMG, specifically assigned the role of adherence and compliance to all regulatory matters and laws, including environmental, health and safety.
 - EPA requests a copy of the results of all inspections conducted by the Cayman Islands Department of the Environment and the Cayman Islands Shipping Registry during the various vessel cleanup/remediation phases, at least as they relate to vessel cleanup and remediation. Please send the requested information to Laura S. Johnson, EPA Artificial Reef Team Lead, Office of Water, at the following address: The CITA with permission from the CI Gov't agencies, which is granted, will provide a copy of all inspections to the US EPA and MARAD. The Cayman Islands Shipping Registry's role in the project is in an advisory capacity to the CIDOE and as such will not be generating any external reports. The role of the CI Shipping Registry will be clarified in our application to MARAD as an advisory role only.

Copies of all results of inspections by the US EPA are reciprocally requested by the CIDOE, which can be sent to the Project Manager, Nancy Easterbrook for forwarding to the relevant CI Governmental agencies.

Laura S. Johnson
U.S. EPA, Office of Water
EPA West -- Room 7115M
1301 Constitution Avenue, N.W.

The applicant or its contractor obtains and complies with all applicable Cayman Islands permits and approvals required to sink the vessel in the Cayman Islands, including but not limited to: the Coastal Works permit; approval from the port of authority of the Cayman Islands; and a permit to sink a vessel. The requested permits will be provided. The Coastal Works Permit and Sinking Permit (Ocean Disposal Permit pursuant to PART VII of the Merchant Shipping (Marine Pollution) Law, 2001) will be provided to US EPA and MARAD once obtained, which will be after final inspections following remediation of the Kittiwake and prior to export of the Kittiwake from the US.

We have agreement in principal on the Coastal Works application which was provided in our application, pending CIDOE final inspections on the ship. Written permission has already been obtained from the CI Port Authority and is included as Attachment 4. EPA recommends that CITA consider a contingency plan that identifies alternative disposal options for the Kittiwake (e.g. domestic scrapping in the United States) if any of the above-mentioned permits are denied. The CITA has obtained a letter from Bay Bridge Enterprises, a MARAD certified ship dismantler in Chesapeake Bay, Virginia stating that it will take the Kittiwake for scrap should we be unsuccessful in our reefing project. (Attachment 5).

- EPA recommends that CITA work closely with the Commonwealth of Virginia to ensure that hull cleaning is done in accordance with all applicable State requirements.
 - CITA documents state that prior to the Kittiwake departing for Cayman Islands, the hull will be cleaned in order to remove marine species foreign to Cayman waters, and all tanks will be cleaned to prevent the import of any invasive species to the Caymans. The CITA has received a letter from the Virginia DEQ (Francis Daniel) that we are permitted to clean the hull in-water. Verbal conversations with the Virginia VMRC (Bob Grabb) state that the VMRC has no objections (nor any permit capabilities) due to the age of the ship and the fact that any species on the hull are now endemic to the region. (Attachment 6)
- CITA/DMG and MARAD satisfy the PCB export requirements in TSCA and its regulations at 40 CFR Part 761, with particular emphasis on the prohibition on the export of PCBs without an exemption (§761.97). We will not be applying for any exemptions.
 - Submit all of the information that EPA has identified in this Attachment and Attachment 2 as missing from CITA/DMG's February 2006 paint sampling plan and the analytical results of the samples collected under the February 2006 sampling plan to Laura S. Johnson, EPA Artificial Reef Team Lead, Office of Water. EPA will review and evaluate the February 2006 sampling plan and the quality of the analytical data generated once the missing information is received. The initial lab reports from the 121 paint samples are not included in this response as they have been provided already. However, the CITA contracted with Universal Labs and Test America (after the fact) to provide us with a QA/QC report on the first batch of 121 samples and subsequent batch of 2 samples. The reports are included as Attachments 7 and 8. From Test America on the 2 samples, you will find the Method Blank and the LCS and LCS DUP which is our QA/QC for this project. These 2 samples were paint chips so as for a Matrix Spike/Matrix Spike Dup, that could not be performed since volume was limited. We then used the second best method to provide for QA which was the LCS/LCS DUP. We submitted our Paint Remediation plan to MARAD in Feb 2006 and received subsequent approval to do the sampling from MARAD. Our current understanding of the EPA requirements is that further field and lab QA/QC was required. As the data collected from the 121 and subsequent 2 samples is still valid data and given the fact that we cannot go back and create additional field QA, we have addressed this matter by way of the final paint sampling that EPI will perform. The paint sampling plan, lab reports and results, combined with the old NAVY data and the Kittiwake maintenance records provided by James Dolph, Naval Historian will provide back up to the final post remediation by EPI. While we are not be able to go back and provide the field QA/QC report on the original samples taken, we will provide this level of detail in the final reports from EPI on all new

samples taken. The paint remediation plan does speak to several of the questions raised in relation to the field work completed.

- Results of paint sample #67 indicate that PCBs greater than or equal to 50 ppm are present. CITA indicated that the original paint sample result will be investigated further. Once the investigation of this sample is complete, send a copy of the results of the investigation including details of anticipated sampling and/or remedial actions to Laura S. Johnson, EPA Artificial Reef Team Lead, Office of Water. Two additional samples were taken around hot spot #67 and lab reports of our findings are included as Attachment 8, along with photo documentation of the area sampled.
- Upon completion of PCB removal, the Cayman Islands should engage a qualified independent third party inspector with PCB experience to verify that CITA/DMG has complied with its proposed PCB remediation and sampling plans for PCBs. EPA retains its discretion and authority to enforce its regulations as EPA deems appropriate. The CITA has accepted your recommendation to contract with a third party and has included the proposal from EPI to conduct these inspections, including re-sampling of the hot spot area (post remediation), random re-sampling of the ships paint, visual verification of the samples already taken (pre-remediation) and complete ship-wide inspection for PCB's and other hazardous materials, as documented in the attached proposal. (Attachment 2 & 3) EPA has reviewed this proposal and made the following statement:

Feb 11/2008 "As agreed on January 16th, EPA provided final comments on EPI's Dec. 21st proposal for the Kittiwake. EPI finalized their plans (submitted Jan. 18th) based on our discussion and EPA's comments. As discussed, EPA has no further objections or concerns regarding EPI's proposal for the Kittiwake.

Laura Casey

Chemist

US EPA

OSW.HWID/ITB

703-308-8462"

Attachment 2. EPA Comments

Cayman Islands Tourism Association's Application to MARAD for Vessel Title Transfer of the ex-USS Kittiwake to be sunk as an Artificial Reef

General Comments

- The export of an ex-vessel containing polychlorinated biphenyls (PCBs) ≥ 50 ppm or contaminated by spills where the concentration of the original PCB source is ≥ 50 ppm is prohibited under the Toxic Substances Control Act (TSCA). In order to export the ex-USS Kittiwake (Kittiwake) to the Cayman Islands for reefing, CITA must comply with the provisions of 40 CFR 761.97 or apply to EPA for an exemption under §(6)(e)(3) of TSCA. **We agree to this. We will not apply for any exemption and we will not accept a ship with ≥ 50 ppm of PBC's on board. We will amend the Application to MARAD and our Reefing plan for consistency in this matter.**
- Compliance with EPA's PCB regulations at 40 CFR 761.97 requires the following:
 - remove and dispose of all manufactured products containing ≥ 50 ppm of PCBs;
 - remove and dispose of all liquids containing ≥ 50 ppm; and
 - remove and dispose of all materials contaminated by spills where the concentration of the original PCB source is ≥ 50 ppm.

In addition to the PCB regulations, the May 2006 version of the *BMP Guidance* recommends that the following material be removed:

- remove all liquid containing < 50 ppm PCBs.

We agree to this, including the removal of all liquids such as oils, fuels, lubes, greases etc with the end goal of no/very minimal sheen being visible upon sinking. Regardless of the historical data of the soundings of tanks, all tanks will be opened, inspected, emptied (as required) and cleaned. All small machinery will be removed. The large Cat engines that powered the ship will be stripped internally, cleaned and have the heads re-installed but with no guts inside. Mechanical cleaning will be used to the extent possible, with advanced cleaning methods used if and where needed. We will not apply for any exemption to TSCA and we will not accept a ship with ≥ 50 ppm of PBC's on board. We will amend the Application to MARAD and our Reefing plan for consistency in this matter.

Although CITA/DMG may accomplish vessel remediation to satisfy the U.S. PCB export requirements, the remediation may fall short of the Cayman Islands Department of Environment requirements of no PCBs on the ex-vessel, regardless of concentration. EPA recommends that CITA prepare a contingency plan that identifies alternative disposal options for the Kittiwake (e.g., domestic scrapping in the United States), should the Cayman Islands deny the import of this ex-vessel for reefing. **The CIDOE has agreed that we can follow the US BMP Guidelines of < 50 ppm of PCB for import. As noted above, we have a contingency plan for scrapping from Bay Bridge Enterprises in any event.**

EPA retains its discretion and authority to enforce its regulations, particularly those related to PCBs, as EPA deems appropriate. Further, EPA retains the right and/or authority to inspect the Kittiwake at any time prior to, during, and after remediation, yet prior to the export of the ex-vessel to the Cayman Islands. **This is acceptable to CITA.**

- Prior to the ex-Kittiwake leaving the James River, the contractor should notify the Commonwealth of Virginia. Further, an inspection of the ex-vessel should be conducted prior to its departure from MARAD's James River Reserve Fleet (Ft. Eustis, VA) for Norfolk, VA, to ensure that no leaks will occur during transit. This inspection should include identifying any spills from the ex-Kittiwake that have occurred while located in the James River. **The CITA will notify the Commonwealth of Virginia DEQ when we are departing the James River Reserve Fleet, when we are cleaning the hull, and when we are departing the US. Any spills noticed will be reported, while in James River or in the Elizabeth River (where remediation will take place). If noted and identifiable, the CITA will notify the EPA of**

any spills in the James River Reserve Fleet while the ship was located there. The Kittiwake will be inspected for suitable hull integrity and conditions to allow her to be towed in a safe manner and without environmental impacts. This is also a requirement of any towing Company that we would use, that will inspect for the watertight integrity of the hull prior to a tow. Also, the MSO will be notified and a dead ship tow proposal will be provided for approval prior to movement of the Kittiwake.

- EPA has seen numerous, conflicting lists describing what items will be removed from the Kittiwake upon completion of all remediation work and which items will remain and be sunk with the ex-vessel. Please provide a single, updated list prior to EPA's initial ex-vessel site visit clearly identifying which items will be removed, as well as which will remain and any cleaning/preparation of those remaining items. This would prove useful during a walkthrough of the Kittiwake prior to cleanup/remediation activities and could help in determining which items identified as remaining might need to be removed per the recommendations of the May 2006 version of the *BMP Guidance*. We offer our apologies for any discrepancies in any lists previously provided. These discrepancies will be amended for clarification in the final Application and Reefing Plan. Regardless of the lists provided, all materials on board the Kittiwake as identified in the BMP Guidelines that could potentially contain any hazardous materials will be treated as such, removed and disposed of as hazardous materials or gutted and cleaned to become non hazardous materials. All items that will remain on the board the ship at sinking time will have been remediated. Items that the CITA wishes to have for 'souvenir/museum' items are in general, smaller items that have souvenir value or that would be items that divers could easily potentially remove from the ship once underwater. Any items that may contain hazardous materials such as the Gyro, Compass and the like would be fully remediated prior to being given to the CITA as a souvenir item. The list of items that the CITA wishes to have as souvenir items (for export) is included following as Attachment 9, with the clear understanding that these items will have to be clean, gutted as needed and prepared for export should they contain any hazardous materials. We wish this list of items to be placed in boxes once cleaned, remain on board the Kittiwake for export, but once in Cayman they will be removed prior to sinking the Kittiwake.

The application package from CITA explains that the cleanup proposed will follow the Draft *National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs*. On May 8, 2006, EPA published a notice of availability of the ultimate version of guidance in the *Federal Register*. The May 2006 version of *National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs (BMP Guidance)* and supporting documents are now available at <http://www.epa.gov/owow/oceans/habitat/artificialreefs/index.html>. EPA remains unclear regarding why the applicant did not refer to the May 2006 version of the guidance document in the applicant's November 2006 submission of the ex-vessel cleanup plan. According to the proposed phases of vessel cleaning/preparation, there are still opportunities to update the vessel preparation plan to incorporate the cleaning methods and cleanup goals as presented in the May 2006 version of the *BMP Guidance*. There are a number of changes to the document that should be incorporated in the final work plan for the vessel preparation/cleanup of the Kittiwake. Incorporating the detailed comments provided below during the onboard hazards assessment as mentioned on p.5-2 of the Kittiwake Reef Preparation Plan could address the outstanding issues that fell short of the *BMP Guidance*, including the requirements for PCB remediation. We have reviewed the new BMP guidelines. The reason that this was not referenced is that we were unaware of it. We will update our Application and Reefing Plan and will conform to the May 2006 BMP Guidelines.

- Some of the changes from the Draft version of the Guidance to the May 2006 version include documentation of the cleanup procedures used and the contaminants that will remain onboard the ex-vessel, more specifically, a description of how the *BMP Guidance* narrative cleanup goals were achieved, and a visual inspection are used to determine whether and how the ex-vessel has been cleaned to the level recommended in the guidance document. According to CITA's application, p.251 states that ship inspections will be conducted and a "cleaning document" will be prepared. EPA requests that CITA share with us the "cleaning document" as it pertains to achieving the *BMP*

Guidance cleanup goals, as well as information pertaining to inspections conducted by CITA, DMG, or the Cayman Islands Department of Environment. Please note that page 251 is a page from our initial Business Plan that was created 7+ years ago, and this is out of date. It was included for reference as to how we arrived at our intention to do this project and will be removed from our new application. In addition to creating a ‘cleaning plan’, which is now our Reefing Plan from DMG, this document also talks to identifying a ship, etc. and was intended only to support the Application to MARAD by way of providing a historical account on the process that we undertook, including having a Business Plan in place before we even started looking at ships. This document is dated, and superseded by the Reefing Plan and our application. The thought was that it would be incorrect/inappropriate to change the original Business plan, as this was the basis for our initial decisions. The ‘cleaning plan’ is in fact the Reefing Plan, including any updates and compliance with the BMP on the narrative for cleaning and the subsequent reports that will be provided during the course of the remediation work. The final inspections, as noted previously, will be completed by EPI.

Also, EPA intends to conduct an ex-vessel walkthrough of the Kittiwake prior to cleanup/remediation activities. EPA anticipates that a DMG representative (and possibly a representative from CITA) would accompany EPA to provide an opportunity to discuss and resolve any concerns regarding ex-vessel preparation/remediation. This initial walkthrough will help facilitate EPA’s final review of documentation supporting completed cleanup/remediation and also expedite EPA’s final walkthrough once vessel cleanup/remediation efforts are completed. We support the 2 walkthroughs and DMG, their primary sub-contractors for QA and hazardous material handling and abatement, the CITA, the CIDOE and our sinking contractor, West Indian Marine will be in attendance to be able to respond to all items raised.

- EPA also recommends contacting the U.S. Coast Guard upon completion of the vessel preparation/cleanup. Because the U.S. Coast Guard did inspect the ex-USS Spiegel Grove for hazardous materials and fuels and oil prior to its sinking to be an artificial reef, and given their current participation and interest to do the same for the ex-USS Vandenberg vessel-to-reef project, the U.S. Coast Guard may want to participate similarly with the Kittiwake vessel-to-reef project as well. We support contacting the US Coast Guard and will invite them to participate in the preliminary, interim and final inspections on the Kittiwake. Per discussions with EPA, the Coast Guard will also be assisting us by performing inspections on the lubes/oils/fuel and liquid products (or lack thereof) onboard the Kittiwake for export.

Detailed Comments

Oil and Fuel

Tanks

- The Kittiwake application to MARAD includes the April 18, 2001, certificate for the purpose of ascertaining by measurement the calculation of the light ship weight of the vessel and the July 7, 1997, correspondence from PetroChem Recovery Services, Inc. stating that all bilges, engine and equipment sump fuel lines were cleaned and free of petroleum products. Although access covers to fuel and lube oil tanks were resealed with original gaskets, covers, and nuts after the work was completed and marine chemist certificates were issued, it might be possible that over the last 10 years some liquid accumulated in these tanks as the vessel hull aged. Deteriorating and leaking hulls are not uncommon for vessels that have been anchored for decades at the reserve fleets. Some vessel hulls have required hull repairs, including hull reinforcement prior to departing the reserve fleets. For this reason, we encourage another visual inspection for the presence of liquids in the above-mentioned tanks. It is also possible that the original gaskets used to seal these tanks may contain regulated levels of PCBs (≥ 50 ppm). While the documentation from 1997 was included in the application for background information on the state of the Kittiwake “as is”, we understand that this information is dated. All tanks, bilges, sump lines, sewage tanks, storage tanks and the like will be re-opened, emptied if needed and cleaned. Please see more details regarding tank cleaning in the page following.

- According to the Kittiwake final tank soundings (dated April 18, 2001), there are diesel oil tanks, lube oil tanks, and “fresh water” tanks that still contain liquids. All tanks should be cleaned of all liquids, and all lines and piping should be flushed. Such cleaning should be certified with appropriate documentation from a marine chemist. This includes any tanks designated for holding ballast water. The cleaning should also include steam washing any machinery or area where oil products may produce sheen. Again, the data collected from Navy on the ship was just a starting point to have an idea of where the ship was at. The removal of all fluids was addressed and submitted in our Reefing plan – page 1-1 (B&T Petroleum recovery services and tank cleaning) and on page 23 of the Application. Perhaps the word fuel was missing but it is included on page 22, which will be corrected. This is also stated on page 14 of the application. The marine chemist certification post cleaning was also agreed upon by CITA in Reefing Plan and all reports will be provided to MARAD, EPA and the CIDOE upon completion of the remediation and abatement work.

The Pillar block bearings on the shaft will be drained, and then cleaned out using live steam. The Shaft will be locked, to prevent any rotation (this is a standard item to be done for any dead ship tow). The shaft is sealed at the stuffing box from a packing gland that has tallow impregnated flax packing in it, and that will stay as is, or will be repacked with more tallow impregnated flax packing if it starts leaking. The flax packing is a non-hydrocarbon, old style, non toxic, and biodegradable packing material, used in virtually all older shaft stuffing boxes. The Shaft will be locked by installing a locking plate, that may actually already be installed, but is often already in the shaft alley available for use.

Following our cleaning efforts, we understand that the US Coast Guard will perform the inspections and provide an independent third party report to the US EPA, MARAD and the CIDOE.

- Prior to commencing the emptying of tanks or bilges as part of the cleaning process, EPA recommends an external hull survey to ensure that no discharges occur during the cleaning process of these tanks and bilges. We intend to conduct a visual internal inspection of the hull stability prior to towing the Kittiwake. The towing contractor will dictate any additional needs for surveys, based on acquiring insurance and permissions for towing the vessel. While we concur that no discharges are acceptable, a hull survey at this point is deemed to be redundant, as we will already have towed the Kittiwake from the James River Reserve Fleet to the cleaning yard at DMG. Other potential spills from off-loading any form of hazmat (regardless of hull integrity) is included in our reefing plan response.
- On p.23 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels,” under the Section “Tank Cleaning,” the letter explains that bilge waters will be flushed as needed to ensure that no foreign waters are being imported to the Cayman Islands. The cleanup and preparation of the ex-vessel should include the bilge areas prior to departure from Norfolk, Virginia and prior to ballast or bilge water intake for ballasting. The bilge areas should be free of visible oils, greases, and sludge; all debris should be removed, particularly any debris contaminated with fuel, oil, or grease. Further, any cleaning fluids used to clean the bilge should be removed from the ex-vessel. We agree with your statements and will revise our application for clarity. All tanks, bilges, pipes and the like will be emptied and cleaned including the removal of any cleaning fluids. Further to this, some tanks will be filled with potable water for towing/ballast. If needed, sea water ballast will be taken on in Virginia and cycled during the tow to Cayman as needed to insure that only waters from a reasonable surrounding area are discharged into any local waters.

The following outlines the procedures that will be followed regarding the cleaning of the tanks on the Kittiwake:

The tank cleaning and gas free operations are contained in section 2.16, pages 2-107 and 2-108 of the DMG HASP. The following is to further clarify, and add to the procedures to be taken for the reef preparation of the Ex-USS Kittiwake. The tank cleaning procedures are as follows and will take place in Virginia at the shipyard of DMG:

1. Pump any free standing liquids, using the appropriate hoses and equipment for the handling of oil. Free standing liquids are to be pumped shore side into the slop frac tank, for further recycling and reclamation.
2. Sludge in the tank bottoms will be hand mucked as necessary, and placed in a sealable ring top drum, to be removed from the ship and recycled.
3. Using a high pressure hose and nozzle, the tank will be washed, from the top down. A suction hose is to be used during washing procedures to prevent any accumulation in the tank bottom, with the wash water being pumped to the shore side frac tank for recycling and reclamation.
4. Cleaning procedures are to be repeated until the tank is clean of any hydrocarbons and residues.
5. After each tank has been cleaned, the tank bottom is to be ragged out as necessary, to be left in a clean and dry condition.
6. Tank is to be mechanically ventilated to remove any smell of hydrocarbons.

Engines and Equipment

- Engines/equipment identified to remain on the ex-vessel should be cleaned of all petroleum products. If such cleaning is not possible, then the engines/equipment that contain petroleum products should be removed. More specifically, combustion engines and associated manifolds should be thoroughly drained, flushed, and cleaned. Further, the entire fuel/oil system should be drained and flushed. As for non-combustion engines, shafting, gearing, and stern seals, the main gear boxes and associated clutches should be drained of all lubricating oils. Internal gear sprayers, lubricating lines, and other components should be removed or drained. *As stated on page 23 of our application, all fluids (oils, lubes, greases, fuel, diesel, hydraulic fuels and the like) will be removed, then tanks will be cleaned and washed as noted above. We agree and understand that all liquids (with the exception of potable water added for ballast) will be removed from the Kittiwake and engines/equipment that will remain on board will be gutted (such as the 4 diesel engines that powered the ship), cleaned and then have the heads replaced. There will be no internal parts that remain. All electric motors will be removed.*
- On p.22 of the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels," under the section "Oil Removal," the oil removal step in the vessel preparation should also include the removal of all hydraulic fluids and heat transfer fluids, if present. *We understand and agree that all fluids (except potable water) will be removed. We will amend the application for clarity. The statement on page 23 of the Application was made by MARAD, not the CITA, but we agree with the comments above.*
- Equipment that needs to be kept in working order for the tow and final placement at the sink site should be drained of fluids as soon as the equipment is no longer needed and prior to the ex-vessel sinking. *During the tow, pumps and lights will be placed on board the Kittiwake. Upon arrival in Cayman, these will be removed and replaced with similar equipment as needed and supplied by West Indian Marine (Cayman). No pumps or other equipment will remain onboard the Kittiwake when she is ready to be sunk; the equipment needs will be supplied from a barge that will be alongside during her the entire time in Cayman until sinking. The sinking Plan is included as Attachment 10. An extract from the plan is noted following from page 11.*

J) Three tender/work boats, the tug/utility vessel MT Sand Cay and the construction spud barge Duck Pond Cay will standby the vessel during the flooding process to ensure the continuous and accurate, controlled flooding of the vessel. Each vessel will utilize mechanical pumping to fill the largest compartments of the vessel with the internal flooding of the smaller compartments achieved through internal inter-compartment flooding and venting holes having been pre-installed prior to the flooding

process. Stand-by vessels and equipment will not be attached to the vessel in any way during the sinking process. All vessels will be operational, manned and on engines maintaining position pressing against the hull of the vessel until required to pull back as the vessel sinks.

K) Flooding hoses will not be attached to the vessel in any way during the flooding process and will penetrate loosely into the hull through large diver access holes only. Length of hose inside the vessel will be no more than a maximum of 1.0m of hose length and will be able to be removed quickly as the vessel's hull sinks under its own flooded weight.

Asbestos

- According to the Asbestos Survey Form completed on August 28, 1997, a post-stripping asbestos survey was conducted onboard the Kittiwake on August 12, 1997, indicating that possible friable asbestos areas identified had been sealed. It is very likely that over the last 10 years asbestos, both friable and non-friable asbestos-containing materials have deteriorated, asbestos wrapped pipes may have broken, and encapsulated asbestos may have been exposed. Because of this, EPA recommends that an additional assessment of existing asbestos serve as an indicator as to whether such materials should be removed, encapsulated, or left undisturbed. *Again, the old NAVY documentation was provided for reference only as a starting point, as no additional asbestos has been added to the Kittiwake during her lay-up in the James River Reserve Fleet. Our reefing plan on page 1-1 clearly states the removal of all asbestos that is loose or may become loose, removal or sealing of all accessible, friable asbestos. Further on page 24 of the application it states all asbestos will be removed or sealed as needed. We understand that loose asbestos cannot and should not be discharged into the water and as such, will remove or secure all such materials.*
- On p.24 of the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels," under the section "Hazardous material abatement process," the letter states that all asbestos will be removed but other documents comprising the application only reference the sealing of friable asbestos and do not refer to further asbestos removal. EPA remains unclear regarding what the proposed remediation approach on asbestos actually is. *We will clarify and make consistent our comments in the application to MARAD and the Reefing Plan with regards to asbestos. The plan is to remove all exposed asbestos, and regardless of the dated Navy records, will inspect the Kittiwake room by room and remove or seal any asbestos as is deemed appropriate in order to comply with the current BMP Guidelines.*
- During the cleanup operations, asbestos-containing material probably will be moved or disturbed. For this reason, assessing the condition of asbestos to determine if asbestos remediation is necessary should occur during the final phase of vessel preparation, well after other materials of environmental concern have been addressed. For example, friable asbestos may be found between bulkheads; this asbestos may remain in place because the asbestos is contained within the bulkheads. If, however, the bulkheads are drilled, cut, or disturbed, the friable asbestos that is now exposed should be encapsulated or removed, in a manner that is consistent with EPA asbestos regulations under the Clean Air Act. *We agree with your comments and will ascertain, inspect and remove or seal/encapsulate any exposed asbestos that is not removed under the guidelines established by the Clean Air Act. This will be accomplished on a room by room basis and once each room is completed, the room will not be entered again by workers except for inspections from the various regulatory bodies.*
- Any asbestos that can potentially get dislodged as the ex-vessel sinks should be removed from the ex-vessel. Friable asbestos should be sealed as a precautionary measure to prevent releases of asbestos in high concentrations during the sinking event. The method of sinking is particularly important to the effective management of asbestos onboard ships. EPA recommends that asbestos remediation take into account the location of asbestos-containing materials in relation to the locations of the ex-vessel that will be most vulnerable for a given sinking method. More specifically, if the sinking method includes the use of explosives, asbestos-containing material that may become disturbed during

detonation should be removed from the ex-vessel. **No explosives will be used; the ship will be sunk in a controlled flooding method.** If the preferred method of sinking is controlled flooding, which seems to be the case for the Kittiwake, asbestos-containing material that may become disturbed during the flooding – especially near the designated areas to allow flooding – should be removed. **We agree with your comments and will remove or seal all asbestos in a secure manner to ensure that any remaining asbestos sealed areas of the Kittiwake are secure for sinking.**

- Although sweeping may occur throughout the cleanup/remediation process, EPA recommends a final vacuum using a HEPA (high efficiency particulate air) filter of exfoliated paint and debris, as well as asbestos fibers, after all of the preparation/cleanup in Virginia is completed. **Agreed. This will be included in our updated reefing plan and application to MARAD.**

Polychlorinated Biphenyls (PCBs)

- p.1 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels.” While this is most likely an application template, the template should include a footnote or disclaimer that foreign countries or governments applying for transfer of MARAD or Navy vessels may face difficulties associated with additional legal requirements necessary for obtaining and exporting ex-vessels such as securing an export exemption from the TSCA §6(e)(3) ban on the export of PCBs. **This is a MARAD issue to respond to, but CITA will not be applying for an export exemption on the Kittiwake.**
- p.1-1 of the “Kittiwake Reef Preparation Plan.” The third paragraph, last sentence states that “Since the PCB remediation plan for the Kittiwake will remove all PCBs, it is anticipated that an EPA RCRA required hazardous waste export permit would not be required.” This statement is not correct; the reference should be to an export exemption under TSCA §6(e)(3), not RCRA. For this reason, the sentence should read “Since the PCB remediation plan for the Kittiwake will remove all PCBs, it is anticipated that an export exemption under §6(e)(3) of the Toxic Substance Control Act would not be required.” **Further to our comments above, we will change this statement to “Since the PCB remediation plan for the Kittiwake will remove all solid and liquid materials that could potentially contain PCB’s and remove and remediate and painted areas that contain PCBs ≥ 50 ppm, we will not be applying for nor request an export exemption under §6(e)(3) of the Toxic Substance Control Act.”**
- Various documents that comprise the application refer to the PCB sampling document entitled “Sampling Ships for PCBs Regulated for Disposal (Interim Final Policy, November 30, 1995).” EPA does not believe that the referenced 1995 guidance provides acceptable recommendations for a PCB sampling plan for ex-vessels to be reefed. The sampling plan in the 1995 document was developed as part of an enforcement agreement between EPA and MARAD for domestic scrapping (i.e., not for creating artificial reefs) but the 1995 document was never used. The document was designed to assist domestic scrappers to locate materials containing regulated levels of PCBs and requires fewer samples than would be necessary to assume that the ship does not contain regulated levels of PCBs (≥ 50 ppm). The 1995 plan is based on the premise that EPA knew what the final disposal options for both regulated and non-regulated materials would be, i.e., that final disposal would be controlled. EPA does not believe that sinking a ship as an artificial reef would represent a “controlled” disposal action.

The referenced 1995 sampling plan relies on best engineering judgment and was developed without supporting data. It has never been tested, used or verified. There is no data to support or disprove this method. The sampling plan does not guarantee or provide any sort of confidence level that all regulated materials will be found. **For this reason, and as advised by MARAD, the Cayman Islands created a Paint Sampling Protocol for the Kittiwake that was specific to this vessel. This was submitted to MARAD on Feb 21, 2006, and as per our understanding, was further forwarded to EPA in the same general time frame. We were advised by MARAD that the 1995 plan was not acceptable and this is the reason that we created a new paint sampling protocol. On April 4, 2006, we received**

permission from MARAD to continue with our paint sampling. The results of this sampling have been provided with updates to them contained in this response.

The CITA has agreed to retain the services of EPI to complete a final paint re-sampling on the Kittiwake and well as a visual inspection of the entire ship for the purpose and goal of preparing a report that would indicate that all PCB's ≥ 50 ppm have been removed from the Kittiwake. The EPI proposal has clarified the references and documentation that they have used in the plan and qualified the various intended use of portions of some of the documentation.

- p.54 of Appendix 3a "Paint Sampling Protocol for the Kittiwake – February 2006." In Section 5 "Methodology," the document states that DMG will use the standards presented in the EPA "Compliance with Toxic Substance Control Act (TSCA) PCB Disposal Regulations: Sampling and Analyzing Paint on Metal Surfaces of Vessels being Scrapped for Metal Recovery" as the approach for the comprehensive paint sampling on the Kittiwake. Please see the preceding comment regarding the use of the referenced 1995 sampling guidance. We note your comments and add that this why we tested for all Arcolor types (expanded from the 1995 document, which is how we found our hot spot as Arcolor 1262 is not a required test in the 1995 document) and expanded the scope of the testing from the 1995 guidelines. The paint sampling protocol was a difficult challenge as most reference materials at the time were not complete or able to be used in their entirety. As an example however, the statistical information provided did result, from 2 independent parties (that being Dominion Marine group coming up with 121 samples to test for paint, and independently EPI arriving at 120 samples) shows that the methodology used has validity in part, while we agree that the entire document cannot be used. Our paint sampling protocol does stand alone, regardless of the 1995 guidance. Additionally, the new Paint Sampling plan provided by EPI serves to re-validate the original 121 paint samples that were taken and provides a more detailed plan on the methodology that will be employed. With the ships maintenance records (James Dolph research), the US Navy reports on the ship when laid up in the James River Reserve Fleet, the DMG paint sampling completed with accompanying lab reports and QA reports and the future EPI independent inspections and sampling, we believe that the documentation provided/to be provided should serve as adequate proof that the Kittiwake is clean of PCB's.
- p.1-1 of the "Kittiwake Reef Preparation Plan" indicates that there will be "a post-remediation sampling protocol for PCBs" and references the use of the PCB sampling document entitled "Sampling Ships for PCBs Regulated for Disposal (Interim Final Policy, November 30, 1995)." This statement contradicts information presented in the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels," which states that the PCB sample results/documentation provided in the application was "included to meet MARAD requirements of no post-remediation sampling and only post-remediation inspections." The Application supercedes the Reefing Application as more current as the requirements from MARAD for no post-remediation sampling came after our Reef Plan was created. However, with our 'hot spot' on the paint (sample #67) there will be post remediation sampling conducted on the paint only. Other PCB materials will not be sampled nor tested but will be visually verified to insure that such materials no longer remain on board the Kittiwake. This will be updated in our final updated application to MARAD for consistency throughout, as per the EPI proposals. MARAD's requirement of no post-remediation sampling should not be interpreted to imply EPA agreement or compliance with the PCB regulations, especially 40 CFR 761.97. EPA retains its discretion and authority to enforce its PCB regulations as EPA deems appropriate. If post-remediation sampling will take place, documentation should explain when the sampling will take place, which materials/items will be sampled, and include details on how the samples will be collected, handled, and analyzed. EPA does not believe that the referenced 1995 guidance represents an acceptable post-remediation PCB sampling plan for ex-vessels to be reefed. The CITA accepts that post-remediation sampling will be done on the paint, with visual inspections on all other PCB potential contaminants. This plan is included in this response as the EPI plans, Attachments 2 and 3.

- p.13 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Navy Vessels” states that the cleanup of the Kittiwake will include the removal of all materials that could potentially contain PCBs. According to this approach, the removal of such material is not dependent on the concentration of PCBs in an item, but rather that the material could potentially contain PCBs. Although the application does provide an inventory of such materials that may contain PCBs as well as provide some PCB sampling results, the list of PCB items to be removed does not include all relevant materials. As provided in both versions of the *BMP Guidance Documents* (and as indicated in the cleanup plan provided by DMG), there are some additional items/materials not listed in this application that may warrant removal due to their potential to contain PCBs -- such as equipment containing capacitors. **Capacitors are included by reference in our documentation, but not consistently. This will be updated in both the application and the Reefing plan, and by reference to using the latest BMP guidelines for materials that could potentially contain PCB’s. The complete list of these materials, as taken from the current BMP guidelines, will be removed. The EPA is correct in the assumption that any materials that are listed in eh BMP as potential sources of PCB’s will be removed from the Kittiwake prior to export.**
- p.2-84 of Appendix E “DMG Shipyard Health and Safety Plan” states that all gaskets, electrical cable, transformers, capacitors, circuit breakers and all other potential media that test positive for PCB contamination greater than 50 ppm will be removed by trained personnel. **This is incorrect and our plan evolved to removing ALL solids and liquids that could contain PCB’s and paint sampling to determine PCB’s in paint, with the new plan to remove paint and materials in our hot spot.** Although p. 2-82 section 2.10.3 “Methods for Determining the Presence of PCBs” details the standard procedures for identifying PCBs on a vessel, indicating which items are presumed to contain greater than 50 ppm of PCBs and will be removed from the vessel, there are some items mentioned on p.2-82 as items that could potentially contain PCBs and there is not an approach as to how these items will be addressed. **The BMP guidelines will dictate the list of all materials that will be removed for clarity in both the Reefing Plan and the Application to MARAD.** These items include adhesives, tapes, plastics, pipe hangers, rubber isolation mounts, foundation mounts, and surface contamination of machinery and other solid surfaces. Further, according to the list under section 2.10.3, it seems that some items listed in Appendix 4 pp.188-189. **The items referenced on these pages are a general list of the ships inventory. This list was created for numerous reasons, but one was to identify to MARAD items on board the Kittiwake that the CITA would like to keep, and request that no further items be removed. Most pages in this section list items that are to be removed from the ship for the purposes of removing flotsam and potential debris, but the list also includes some items that are considered Haz Mat. Any items to be removed as potential flotsam will be treated as any other item, meaning that if it is a potential source of hazardous materials, it will be treated as such during remediation.**

The list of items that CITA wishes to have for ‘souvenir’ items that are noted as ‘to be removed from the ship’, would be cleaned/remediated, stored in boxes and transported to Cayman, but not sunk with the ship. It is our intention that these items are ALSO cleaned as required before transport here, for example a brass bell may not require cleaning, but a booster pump, gauges, compressor would have to be cleaned and gutted as need be for export. may need to be removed or cleaned of regulated PCBs if those items are to remain on and be sunk with the ex-vessel. For this reason, these two documents provide conflicting lists of items, materials, and wastes to be removed and EPA requests an updated, exact list of material, items, and wastes to be removed and a list of items and materials to remain onboard. **Agreed, and even the souvenir items or components of them will be included in the disposal lists for Haz Mat.** CITA/DMG should also discuss how it will ensure that the items and materials to remain onboard or removed for static display will have any possible hazardous components removed (fluids, capacitors, thermometers, etc.). **All items remaining on the Kittiwake for export to Cayman will be remediated, as per our statements that all potentially PCB contaminated materials will be removed and treated as Haz Mat. This will be clarified in the final Reefing Plan and Application to MARAD. The specific list of items as souvenirs is attached as Attachment 9.**

- p.2-84 of the Appendix E “DMG Shipyard Health and Safety Plan” states all media that “test positive for PCB contamination greater than 50 ppm will be removed by trained personnel.” This statement does not accurately identify the correct standard; it should read “...greater than or equal to 50ppm...” The export of PCBs or PCB Items containing ≥ 50 ppm PCBs, or contaminated by spills where the concentration of the original PCB source is ≥ 50 ppm, for disposal is prohibited by TSCA and the provisions at 40 CFR 761.97. PCBs or PCB Items ≥ 50 ppm must be removed from the vessel and properly disposed in the United States. If PCBs ≥ 50 ppm are to be left on the vessel for whatever reason, CITA/DMG must apply to EPA for an exemption under TSCA §(6)(e)(3). **We will correct all references to PCB’s to state less than or greater than or equal to for clarification purposes. In addition, the statements referenced will be clarified as it will be materials, as identified in the BMP, that could possibly contain PCB’s in any quantity, regardless of quantity, with the exception of paint as noted.**

Further, this approach to PCB removal does not correlate with the Cayman Islands Tourism Association’s correspondence to MARAD (dated May 18, 2005), which states there is a “zero PCB requirement, as no PCBs can be imported into the Cayman Islands per [Cayman Islands] environmental requirements.” EPA’s PCB regulations require the following:

- remove and dispose of all manufactured products containing ≥ 50 ppm of solid PCBs;
- remove and dispose of all liquids containing ≥ 50 ppm; and
- remove and dispose of all materials contaminated by spills where the concentration of the original PCB source is ≥ 50 ppm.

In addition to the PCB regulations, the *BMP Guidance* recommends that the following material be removed:

- remove all liquid containing < 50 ppm PCBs.

Our remediation plans will be modified to be in conformance with the EPA guidelines as stated above. All liquid will be removed, except for potable water added for transport. As noted above, the CIDOE has accepted no PBC import ≥ 50 ppm instead of no PCB’s.

- p.13 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels.” Section 1 “Pre-remediation Paint Sampling for PCBs - April 2006 Paint Sampling Plan.” While MARAD may have approved the paint sampling plan, EPA notes that MARAD’s approval of this sampling plan does not imply EPA endorsement of this plan as satisfying the PCB export requirements in TSCA and its regulations at 40 CFR Part 761, in particular §761.97. EPA retains its discretion and authority to enforce its regulations as EPA deems appropriate. **We accept at this time that MARAD approval of our paint sampling plan did not imply EPA’s approval of this plan, and no not intend to apply for an exemption under TSCA. However, as the plan was executed and generated statistically valid results, and that we cannot go back now and accomplish additional levels of sample data, field QA/QC, and in consideration of our plan for EPI to resample all paint as described in the attached Risk Assessment and Paint Sampling Plan from EPI, we trust that this will satisfy the EPA requirements.**
- p.13 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels.” Section 1 “Pre-remediation Paint Sampling for PCBs - April 2006 Paint Sampling Plan.”
Sample #67 Re-sampling Plan – The information provided in the application regarding sample #67 lacks detail pertaining to the approach used to determine the validity of the result for this sample and lacks detail as to how CITA will proceed once the investigation of this sample is complete. Also missing is a copy of the resampling plan and analytical results.. The following information should be included as part of the discussion about this sample and submitted to Laura S. Johnson, EPA Project Lead, Office of Water:
Additional details on the sampling conducted is included n this response, including the lab results from the resampling effort, the QA/QC report from the additional 121 samples and photo

documentation on the paint samples taken. The information requested above is included at Attachment 7 and 8 to this response.

- Possibility of laboratory error; The Lab QA/QC reports are included as Attachment 7
- Re-extraction and re-analysis of original sample;
- Re-analysis of the original extract;
- Development of the resampling plan including sampling location selection process; The sampling locations and number of samples were selected by using the statistical methodology included in the “Compliance with Toxic Substance Control Act (TSCA) PCB Disposal Regulations: Sampling and Analyzing Paint on Metal Surfaces of Vessels being Scrapped for Metal Recovery”. The CITA understands the limitations associated with the preceding publication and acknowledge that only those portions that support the statistical methods presented were used.
- Status of the resampling and results confirmation; and
- A detailed discussion of how DMG and CITA propose to proceed if the results for Sample #67 are confirmed.

The updated re-sampling plan is included as to the process and methodology that was employed in taking the additional samples, as well as the lab results and the lab QA/QC reports. No additional information is available as this is a process that was undertaken over a year ago. The 2 new samples taken in batch #2 showed an even higher concentration of PCB's, which indicates that we do in fact have a PCB contaminated area, most likely from leaching as our remediation plan discusses. Please note that Universal Labs purchased STL/Test America and as such refer to the same Company in the context of the lab results and QA/QC reports. The remediation plan for this topic is contained in Attachment 1.

- “Appendix 3a – Paint Sampling Protocol for the Kittiwake – February 2006.” The inclusion of the February 2006 version is confusing. EPA suggests deleting the reference to the February 2006 version or distinguishing this version from the April 2006 version. This will be addressed and only the final version of the sampling protocol for the Kittiwake will be included in our final documentation. (attached) We were trying to show a historical trail on our approach, and there is conflicting information in our documentation as time progressed, so older documents will be deleted in the final submission.
- “Appendix 3a – Paint Sampling Protocol for the Kittiwake – February 2006.” CITA's plan for sampling paint on the Kittiwake fails to provide the level of detail typically found in sampling plans or field standard operating procedures (SOPs). A sampling plan should provide enough detail so that a person unfamiliar with the project and the sampling can read and execute the plan with little to no problems. The sampling plan CITA submitted in its application is based on an outdated EPA guidance document that EPA does not believe is appropriate for artificial reefing and should not be used for that purpose. EPA acknowledges that CITA/DMG has already collected and analyzed 121 paint samples using this plan but EPA has noted significant deficiencies with the analytical data in addition to following an inappropriate sampling guidance document. We trust that this matter has been addressed already in this response and that the data will provide useful information of the state of the Kittiwake, regardless of the fact that our sampling plan may not have met all of the requirements of the EPA. We waited for input and response, but lacking those, went ahead with our plan. Our EPI plan will adhere to the proposal provided and the preliminary data from the DGM paint sampling will provide back to the final documentation.

The following information is either missing from or deficient in the paint sampling plan CITA provided:

- Process for selecting the number of samples, the sampling locations and for determining sample dimensions and size;
- Process for selecting alternate sampling locations in the event a primary location is determined to be inaccessible;

- Diagram indicating where in the vessel the samples were collected; - **Photo documentation provided.**
- Decontamination process for reusable sampling equipment;
- Waste and trash handling procedures;
- Field QA/QC procedures including collecting duplicate samples, split samples and equipment blanks;
- An analytical method (SW-846 8082) was specified but the sampling plan does not identify an extraction method or an extract cleanup method.

Please see the attached sampling plan (Attachment 1) for updates on the process that was used, to the extent that we can address the issues raised here by EPA.

EPA requests that CITA/DMG submit the needed information to Laura S. Johnson, EPA Artificial Reef Team Lead, Office of Water.

- “Appendix 3b – Paint Sampling Results on the Kittiwake – 2006.” A diagram showing where the samples were collected on the ship would complement the chart titled “Summary of Paint Analysis.”
 - These samples were collected using a sampling plan based on an outdated EPA guidance document that EPA does not believe is appropriate for artificial reefing and should not be used. EPA has noted deficiencies in the February 2006 sampling plan. See previous comments on sample quality.
 - Results lack laboratory QA/QC results and information documenting possible laboratory issues such as interferences, dilutions and failed QA/QC, how the results may or may not have been affected and what corrective action was taken, if any.
 - There appears to have been no field QA/QC samples collected. Field QA/QC samples would include, but are not limited to, duplicate samples, split samples and equipment and trip blanks.
- As requested above, please provide a document detailing how sample #67 will be handled. **Please refer to the updated Paint Remediation plan (Attachment 1), the EPI Risk Assessment Proposal (Attachment 2) and the EPI Paint Sampling Plan (Attachment 3). These plans have been reviewed and refined with EPA assistance and have been approved by Laura Casey of the EPI PCB department.**
- The application does not list the methods used for extracting the samples and for extract cleanup. **The extraction method used was SOXLET 8082.**

See previous comment discussing the needed improvement to the sample collection plan and submitted data.

Please see the attached sampling plan (Attachment 1) for updates on the process that was used, to the extent that we can address the issues raised here by EPA.

- All liquid-filled electrical equipment suspected of containing PCBs or PCB contaminated dielectric fluid should be removed, regardless of PCB concentration. **Agreed with the exception of the engine blocks, if possible that will remain, but these will be stripped inside and cleaned, with just the blocks remaining.** Materials such as lubricating oils and greases used for winches and cargo-handling machinery, hydraulic fluids, heat transfer fluids, and waste oils should be removed from the ex-vessel in accordance with the guidance in the “Oil and Fuel” section of this document. **This has been agreed to and we will update our application and reefing plan to reflect these statements.** All materials contaminated as the result of spills of liquids containing ≥ 50 ppm PCBs must be removed. If there is no information regarding whether a spill occurred and/or the PCB concentration of any spilled liquid, design and implement a representative sampling plan to verify that there are no PCBs present in the areas surrounding the liquid-filled equipment or systems. If the sampling results indicate presence of PCBs as a result of a spill of liquids containing ≥ 50 ppm PCBs, the spill residue and the materials contaminated by the spill must be removed in an appropriate manner (e.g., remove paint from a contaminated surface such as a metal deck, strip the contaminated area down to bare metal in

accordance with 40 CFR 761.79(b)(i)(B)). This is agreed and has been addressed in our updated remediation plan.

- “Appendix 3d – HAZMAT Inventories on the Kittiwake (Various Surveys 1994-1997).” The PCB inventories provided in this Appendix are lacking information on how the samples were collected, handled and analyzed. Until this information can be produced and evaluated, this data should be considered historical and should not be relied upon in determining the presence or absence of PCBs on the Kittiwake.
 - p.152 – PCB Sampling Data – Kittiwake – Liquid PCBs Aboard*
 - The heading on this is incorrect. This data is not for liquid PCBs but for solid or non-liquid PCBs. This will be corrected.
 - p.159 – 167 – PCB Sampling Log Sheets*
 - Each of these log sheets specifies a certain number of samples to be collected but does not include information on how these numbers were determined or how the sampling locations were selected. Such information should be included.

We are not relying on this data, other than as a base line as to the state of the ship, to determine relative costs and work efforts. The data was provided by Navy and dated and as such no further information can be provided on this data at this time. The data supplied was an attempt to provide the clearest picture possible of the general state of the ship prior to actually working on her. If EPA would like this data removed, then we will remove it from our final documentation, but we believe that it is valid data as a baseline, and combined with all of the new data provided and to be provided, will provide a realistic picture of the state of the Kittiwake upon export.

“Appendix 3c – Naval Historian Documentation on the History of the Kittiwake Maintenance Schedule.” The maintenance history only provides information on when the hull was sandblasted and painted. No information is provided related to the painting or repainting of the interior or exterior weather decks. Based on the maintenance history of the Kittiwake, EPA cannot conclude that the paint on the vessel does not contain regulated levels of PCBs. In fact, the results for Sample #67 show that regulated levels of PCBs are present in paint onboard the Kittiwake. The CITA paid for a contract to have the maintenance of the Kittiwake researched and outlined for our project, and this data was provided as reference only to a relative state of the ship. We are not relying on this data but used it to determine the approximate costs of remediation. Should the EPA wish to have this data removed, we will do so, but believe that it provides yet one more set of relevant data as to the general state of the Kittiwake. To support this, we have done paint sampling for PCB’s on the Kittiwake as noted.

- “Appendix 4 – Diver Reefing Requirements of the Kittiwake”
 - p.189 – General Ship-Wide Reefing Plan*
 - The Plan does not confirm that all electrical cable will be removed or specify that it will be removed as part of the vessel’s remediation plan. Cabling is known to contain regulated levels of PCBs and should be removed. CITA/DMG’s original remediation proposal called for the removal of all electrical cable. This is a subsection of the plan only, and the electrical cable removal will be removed ship-wide. This is clearly stated in our application and reefing plan. It was not referenced in the reefing plan addendum (page 189) only because it was repetitive and assumed that it would be removed from all areas. This will be clarified in our final response for consistency.
 - p.189 - 190 – Souvenir Items to be saved for CITA*
 - Some items listed may contain components such as PCB capacitors, transformers, voltage regulators or contain hydraulic or heat transfer fluids such as depth sounders, fathometers, compressors and radio equipment. If “souvenir” items are going to remain onboard to be sunk

with the ex-vessel, it is necessary to ensure that liquids containing PCBs (regardless of concentration) are removed and that equipment or manufactured products containing PCBs \geq 50 ppm are removed. If CITA/DMG plans to salvage any of these “souvenir” items for static displays, the same approach is necessary to ensure that liquids containing PCBs (regardless of concentration) are removed and that equipment or manufactured products containing PCBs \geq 50 ppm are removed. As stated in the PCB chapter of the May 2006 version of the *BMP Guidance*, “Where there is reason to suspect that equipment or manufactured products containing solid PCBs may contain PCBs \geq 50 ppm, either remove the equipment or component from the vessel, or provide proof that the equipment or component is free of PCBs.” **This is agreed and will be stated in our final response for clarity. Also all known PCB potential materials in this list that were to remain on board were noted as being gutted, meaning that all cabling, electrical, capacitors, gaskets, etc. were to be removed, and as stated, all materials containing potential PCB’s will be treated as Hazmat.**

- Appendix 3a “Paint Sampling Protocol for the Kittiwake.” While PCB-containing materials may be found throughout a ship, several areas on ships have an increased likelihood of containing PCB-bearing materials: areas or rooms subject to high heat or fire situations such as boiler rooms, engine rooms, electrical/radio rooms, weapons storage areas, or areas with hydraulic equipment. Because such equipment or systems are vulnerable to leaks and spills during the lifetime of the vessel, areas surrounding the equipment or systems (e.g., carpet, wood, rubber/plastic mats, paint) are likely contaminated by liquids containing PCBs. For this reason, during vessel cleanup/preparation, attention should be directed to locations on the ship that are known to house equipment and systems that typically contain PCB liquids; this remediation approach should be incorporated in the sampling protocol provided on p.55 (under section 6.11) as well as p.56 (under sections 7.7 and 7.10). All materials contaminated by spills of liquids containing PCBs \geq 50 ppm must be removed. **This is agreed, and the appropriate updates will be made to our final documentation. Particular attention was paid to areas of the ship that would be more susceptible to PCB contamination during original sampling and the same attention will be paid in the post remediation sampling and inspections also.**
- p.5-5 of the “Kittiwake Reef Preparation Plan” Section 5.12 “HM/HW Abatement and Removal” should include PCB disposal requirements in addition to RCRA requirements. **Agreed.**
- p.7-2 of the “Kittiwake Reef Preparation Plan,” Section 7.2 “Environmental Compliance Record Keeping” should include requirements under 40 CFR Part 761. Please refer to 40 CFR Part 761, in particular §761.61 (Remediation), 761.62 (Bulk Product Waste) and 761.79 (Decontamination). All have PCB recordkeeping and reporting requirements. Also, Subpart K pertains to recordkeeping and reporting. EPA also has an in-depth Q&A that contains a section on Bulk Product Waste on EPA’s PCB website at <http://www.epa.gov/opptintr/pcb/pubs/guidance.html>. **The noted references will be included in our Reefing Plan and adhered to for record keeping and reporting on PCB’s.**
- Engines/equipment identified to remain on the ex-vessel should be stripped or decontaminated of PCB containing or contaminated parts/components. If decontamination and/or stripping are not possible, the engines/equipment that contain \geq 50 ppm PCBs or have been contaminated by spills of PCBs \geq 50 ppm must be removed. **Agreed. This will be clarified on our final response. Minimal equipment will remain on board with the exception of the main diesel engines (4) with we intend to strip, dispose of the internal components, clean and place the heads back on for diver interest in the engine room.**

Paint

Anti-fouling Underwater Hull Coatings

- p.23 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels.” Under the Section “Disposal procedure of oil and other hazardous substances,” TBT is listed as a hazardous material that will be removed. EPA assumes that TBT is identified to indicate that biocides used in anti-foulant paints would be removed. Not all anti-foulant

paints, however, contain TBT. Anti-fouling agents also include copper, organotin compounds, and zinc. Also, the hull cleaning to remove any potential foreign marine species entering Cayman waters may expose anti-foulant paints and inadvertently re-activate these biocides. Per the May 2006 version of the *BMP Guidance*, if there is minimal active biocide remaining on the vessel, no preparation to the underwater hull area is necessary. If the anti-fouling system is active, however, then the system should be removed to prevent the release of the anti-foulant system's harmful biocides. Please refer to the Paint chapter of the *BMP Guidance* for further information.

We have done hull/anti-fouling paint samples twice, with the results contained in the original batch of 121 samples (samples # 118 – 120 for PCB's) and the second batch of 2 samples, both amidships with one starboard and one port side done separately in August 2006 for TBT's . The Kittiwake hull/bottom paint has not been painted with anti-fouling paint since the late 1980's. The anti fouling paint that is on the Kittiwake is a self polishing type that is very deteriorated and worn from use. While some AF is rated for 2 years, and some for as much as 5 years, the water quality department from EPA has made the point that they have found active anti fouling paint 12 years old, but this was isolated in our understanding and in any event, the Kittiwake paint is older than 12 years.

To be sure however, we subsequently tested the anti-fouling paint (2 samples) in August 2006, the sample results and photo documentation are contained in Attachment 11. These tests were specific to TBT's in the anti fouling paint, which tested negative.

It is our intent to clean the hull, in water in Virginia, prior to export/tow to the Cayman Islands, not sooner than 3 weeks before the tow. This requirement is needed to insure that importation of foreign marine species are not introduced to Cayman waters. The vessel has been in the James River for decades, so presumably the growth on the hull is the same as would be found on dock pilings and all other underwater structures, and indigenous to the area.

MARAD has also supplied a letter, Attachment 6 from the VA DEQ which gives MARAD the authorization to conduct in water hull cleaning of vessel in Virginia State waters. (April 2007)

Further the CITA will follow the guidelines as referenced in the letter from Francis Daniel of Virginia DEQ, including the US Coast Guard memo of Dec 27, 2006, Hull Fouling and Movement of MARAD NDRF Vessels and its accompanying Interim Guidance Criteria for Cleaning Hulls of MARAD Vessels Prior to Relocation. The exception is that the Virginia DEQ has agreed that the hull can be cleaned at the DMG yard prior to export to Cayman and not in the James River Reserve Fleet prior to its first tow to DMG shipyard, given the close proximity of these 2 locations. The Commonwealth of Virginia DEQ office will be notified by CITA prior to in-water hull cleaning. A video of the hull cleaning will also be taken and provided to all authorities prior to export.

- EPA recommends that CITA work closely with the Commonwealth of Virginia to ensure that hull cleaning is done in accordance with all applicable State requirements. The CITA has worked with the Commonwealth of Virginia to ascertain the current requirements, and a letter of their approval for in-water hull cleaning is included as Attachment 6.

Solids/Debris/Floatable

- p.23 of the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Naval Vessels." Under the section "Intended stripping such as machinery, structure, electrical components, and hazardous materials in preparation of the vessel for sinking," the application states that as much equipment, engines, and machinery as possible will be left onboard for diver interest; however a plan for cleanup of such items is not provided. As recommended in the May 2006 version of the *BMP Guidance*, all fuel and oil should be drained, and any components that can not be flushed (e.g., oil filters and strainer elements) should be removed. We say that all oils, lubes,

haz mat, etc. will be removed, and this applies to any equipment left on board the ship also. We acknowledge that any items left on the board the Kittiwake for 'diver interest' will be treated in the same manner as any other materials that are removed from the Kittiwake as it relates to hazardous materials. Any materials that could potentially contain PCB's (or other hazardous materials) will be removed, treated as hazardous materials, and the remaining structure/outside housing of the machinery will be cleaned. Please note that this reference was for general comments only, such as we wanted brass telephones, air banks/storage tanks, water 'cannon' housings and the like to remain on board, and these were a part of our reference to 'machinery' in general.

- On p.23, the application indicates that all loose furniture will be removed; however Appendix 4 "Diver Reefing Requirements of the Kittiwake" indicates that some furniture will remain. Any remaining furniture should be either fastened to the ex-vessel or removed. It seems that the plan for the vessel preparation also includes leaving a number of items, otherwise detachable, on the ex-vessel even once sunk as a reef. When assessing removal of items from the Kittiwake, all material that is not an integral part of a permanently attached appurtenance and that could become separated from the ex-vessel during sinking should be removed from the ship prior to sinking. As recommended in the *BMP Guidance*, all items that remain on the vessel should always be negatively buoyant. The guidance further states that heavy and/or bulky fitted equipment that was disconnected or otherwise detached from the structure of the vessel for cleaning or inspection can remain in its original compartment subject to issues of diver safety. Otherwise, items remaining on the vessel should be contained in a sealed compartment or structural tank that is below the waterline of the ship and underneath the largest section of the superstructure once both the compartment and the debris have been inspected. The items that would remain on the ex-vessel as indicated in Appendix 4 should be addressed in this manner. The ship inventory was completed while in the vessel, and addressed these issues. There is an overriding standing order that all potential flotsam, rusting or damaged items, possible entanglements need to be removed. While we cannot find any 'furniture' items in the list (apart from attached steel like the officers quarters tables, bare bunks (steel), that are in fact firmly attached to the floor and in lower compartments, we understand the intention that is implied in not wanting loose flotsam during the sinking of the Kittiwake. Attention will be paid to all remaining items and their stability, along with diver safety for navigation, lack of entanglements and longevity. Any post-sinking maintenance, minor cleanup, loose parts, etc. is addressed in our Maintenance Plan. (Attachment 12)
- All items constructed of wood should be removed, as wood will deteriorate over time and likely will become floatable. This response is as above. We are not aware of any remaining wood, but understand and accept that should any wood be remaining at sinking, that it will soon need to be removed as a part of our post-sinking Maintenance Plan.
- Although sweeping may occur throughout the remediation process, EPA recommends a final vacuum using a HEPA (high efficiency particulate air) filter to remove all dirt, loose scale, trash, exfoliating paint, paint chips, hazardous materials, and other foreign matter after all vessel preparation/cleanup in Virginia is completed. Agreed, this will be included as a part of our reefing plan.
- All plastic and other materials that may break from the ex-vessel and create a hazard to divers or the marine environment should be removed. Understood and agreed, although we believe that we addressed this by stating in various parts of our plan that that all potential debris and flotsam will be removed. In walking the ship on 2 occasions, a list of items for removal was compiled and submitted as a part of our plan.
- Appendix 4 "Diver Reefing Requirements of the Kittiwake" has a number of lists indicating which items are to be removed, which will remain on the ex-vessel after reefing, and which will be designated as souvenirs to be saved for CITA. The appendix and the application as a whole lack details, and EPA remains unclear regarding which items will remain with the ex-vessel, how items will be cleaned/prepared if they are to remain on the ex-vessel, and whether such items will be placed

on static display versus being sunk with the ex-vessel. The only items on static display are the one list under 'Souvenir items to be saved for CITA'. All other items will be removed or remain on board as so noted, but in any event, the overriding rule is that all haz mat will be disposed of accordingly, and all materials that are potential haz mat will be treated as such. More specifically, a number of items on the lists in this appendix could possibly contain PCBs or liquids such as lubricants, oils, hydraulic fluid or heat transfer liquids. There is no mention of draining and cleaning these items or removing them if they cannot be drained and cleaned. Again, all items on the ship will be treated equally, whether they remain or are removed. We will update our application for clarity on this matter. EPA also notes that a number of these items could also contain voltage regulators, bushings, capacitors, transformers, or ballasts. These components should be removed and if the components cannot be removed, the entire piece of equipment should be removed. Understood and agreed.

Other Materials of Environmental Concern

Invasive Species

p.13 of the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Navy Vessels." EPA recommends hull cleaning/ballast water exchange in order to remove any potential of importing any foreign marine species to Cayman waters. There is no description in the application package as to the approach for hull cleaning and there are conflicting descriptions as to ex-vessel de-ballasting. From the information provided, it appears that potable, treated water would be placed in designated tanks to ballast the ex-vessel. Other documents, however, indicate that additional ballast intake would occur once the ex-vessel is underway during the tow from the James River Reserve Fleet to the DMG facilities, and from the DMG facilities to the Cayman Islands. EPA remains unclear regarding how and when the ballast water would be released and/or treated. A set of General Arrangements (GA) has been sent to the EPA and MARAD as a part of our final plan. These arrangements show which tanks will be filled with potable water (and where air vents and diver access cutouts will be cut). Ballast sea water will be taken on in Virginia if needed for the tow and if taken on, will be recycled during the tow to Cayman. All tanks possible will be filled with potable water.

As the GA are too large to send on email, I have posted these separately to you for your review.

In discussions with Francis Daniel of the Virginia DEQ, he advised that while their role is to protect water quality, that the total amount of suspended solids in the water column, while artificially raised for a temporary period of time, is an acceptable degradation that the Commonwealth is willing to accept to get the ships out of the area, with more serious environmental damage potential coming from lots of oil and hazmat in the ships and hull degradation or hurricanes posing potential devastating results. We were further advised that the Eastern branch of the Elizabethian River is very polluted already and the Southern branch is listed as one of the most polluted rivers in the area. Further, DEQ advised that any TBT activity is minimal related to the amount of TBT contamination from waterways with normal shipping activities; that our hull cleaning would not change the levels by any amount. Additionally, we completed 2 additional hull paint/anti-fouling paint samples and the photos and lab reports are attached as Attachment 11.

Mercury and other harmful contaminants

- Some of the items identified as remaining onboard to be sunk with the ex-vessel include refrigerators, freezers, cold storage units and other temperature regulated equipment that have thermometers or temperature gauges. These thermometers or gauges should be removed as they often contain mercury as a component. Agreed, and we will remove or gut the units, remove all parts and leave only the frame of any remaining machinery on the Kittiwake.
- All fire and smoke alarms/detectors should be removed. They often contain mercury and/or a radioactive component, specifically, americium. Agreed.

- All liquid filled gauges should be drained or removed. **Agreed.**
- The list of hazardous materials did not include items such as mercury or fire fighting compounds. **The list of hazardous materials will be updated to be in compliance with the BMP guidelines and specific items will not be referenced so that the one comprehensive list, as noted in the BMP Guidelines, will be the only referenced list. This will eliminate the unintentional oversight of missing a type of material from any given part of the application and reefing plan.**

Site Selection

- Placement of an ex-vessel in a high energy environment (e.g. where there is significant wave, current, or tidal action) or in an environment vulnerable to hurricanes would likely result in more rapid degradation of an ex-vessel structure than if placed at typical reef locations. Also, water depth at a reef site may critically affect an ex-vessel's stability and long-term structural integrity.

According to CITA's application, the ex-vessel will be sunk in approximately 60 feet of water which will allow for 15 feet of clearance from the highest point of the ex-vessel to the surface of the water. Because the Cayman Islands do encounter hurricanes, as well as adverse weather during the winter months, such conditions affect the site (as stated on p.221 of CITA's application). If ships are to be placed in high intensity/energy environments or areas vulnerable to hurricanes, EPA recommends additional vessel preparation measures. For example, non-friable asbestos and intact/undisturbed or sealed friable asbestos deemed acceptable to remain on the ex-vessel if used as reef habitat should be removed to prevent any release of asbestos that may occur when placed in a relatively shallow area that is vulnerable to hurricanes. For the same reason, any negatively buoyant vessel debris and more of the affixed ship components and fixtures should be removed. EPA recommends planning for worst-case storms and hurricanes where movement of the ex-vessel would be detrimental to the ecosystem surrounding the reef site. **The site has been approved as a sinking site by all relevant CI authorities. We certainly understand your concerns and understand our weather patterns and hurricane issues. We are confident that our cleaning plan and post-sinking maintenance plan addresses the above concerns. The Sinking Plan talks to our prevailing weather patterns, includes a 4-point anchoring system and discusses other matters related to weather issues. This is included as Attachment 10.**

- On p.30 of the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Navy Vessels," section "b" requests weather information as it affects water movements and coastal energy levels seasonally and cyclically. The information that was provided in response does not include any information pertaining to hurricanes. This type of information is pertinent for determining the reef site. The application package should acknowledge and discuss hurricane patterns or past storm events. **The site has been approved as a sinking site by all relevant CI authorities, whom are very familiar with weather patterns, sand movement, hurricane strength and directions and we are confident that our plan incorporates best practices and worse case scenarios for the location of the Kittiwake.**
- On p.40, the "Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Navy Vessels" states that the Cayman Islands Department of Environment provided guidelines to the Kittiwake project team regarding impacts on coral reefs. In response, the parameters for sinking the Kittiwake include a requirement that the ex-vessel not be sunk within a 300 foot diameter of existing coral reefs (with variances provided to allow a 100 foot diameter to coral reefs) and a requirement to be sunk in sufficient water depths to minimize major storm movement/relocation or breaking of the Kittiwake. There is a discrepancy, however, between the department of the Environment's Guidelines (at p. 257) and the proposed sink site for the ex-Kittiwake described in the application. **Agreed, and as time has progressed, we have approval for the sinking site, including the variance allowed by the DOE, that the site can be within 100 feet of natural coral reefs, given a more robust sinking and maintenance plan. As such, a more robust maintenance and contingency plan have been put in place. Attachment 12.**

- “Appendix 14 – Cayman Islands Department of the Environment Guidelines, Site Selection, p.257.” The first bullet of this section of the Department’s Guidelines states that wrecks “should be as far from coral as possible with a minimum distance of 500 feet.” The Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Navy Vessels, Part V – Location of Sinking, pages 30 and 34, however, specifically says the ex-vessel will be sunk 100 ft from the nearest coral reefs. EPA recommends that this discrepancy be eliminated. **Agreed, and as time has progressed, we have approval for the sinking site, including the variance allowed by the DOE. As such, a more robust maintenance and contingency plan have been put in place**

Dated/Expired Permits and Inspections

- According to the Asbestos Survey Form completed on August 28, 1997, a post-stripping asbestos survey was conducted onboard the Kittiwake on August 12, 1997, indicating that possible friable asbestos areas identified had been sealed. It is very likely that over the last 10 years asbestos, both friable and non-friable asbestos-containing materials may have deteriorated. Because of this, it is recommended that an additional assessment of existing asbestos serve as an indicator as to whether such materials should be removed, encapsulated, or left as undisturbed. **This will be accomplished during our remediation work, using visual inspection on a room by room basis, further to any cutouts being completed, to insure that all asbestos is contained/sealed or removed.**
- The De-ratting Exemption Certificate expired in April, 1998. Another inspection should be conducted and this certificate should be updated. **We will provide an up to date De-ratting certification further to remediation and prior to export.**
- The application includes the April 18, 2001, certificate for the purpose of ascertaining by measurement the calculation of the light ship weight of the vessel and the July 7, 1997, correspondence from PetroChem Recovery Services, Inc. stating that all bilges, engine and equipment sump fuel lines were cleaned and free of petroleum products. Although access covers to fuel and lube oil tanks were resealed with original gaskets, covers, and nuts after the work was completed and marine chemist certificates were issued, over the last 10 years some liquid is likely to have accumulated in these tanks as the vessel hull ages. Deteriorating and leaking hulls are not uncommon for vessels that have been anchored for decades at the reserve fleets. Some vessel hulls have required hull repairs, including hull reinforcement prior to departing the reserve fleets. For this reason, EPA encourages another visual inspection for the presence of liquids in the above-mentioned tanks. **Agreed. As noted above, our use of the old Navy data was for baseline estimating purposes only. All compartments, hatches, tanks, bilges and the like will be re-opened, drained if needed, cleaned and filled with potable water, sealed or opened for diver access as applicable to the individual area.**
- “Appendix 3c – Naval Historian Documentation on the History of the Kittiwake Maintenance Schedule.” The maintenance history only provides information on when the hull was sandblasted and painted. No information is provided related to the painting or repainting of the interior or exterior weather decks. Based on the maintenance history of the Kittiwake, EPA cannot conclude that the paint on the vessel does not contain regulated levels of PCBs. In fact, the results for Sample #67 show that regulated levels of PCBs are present in paint onboard the Kittiwake. **This has been addressed above in our response.**

Outstanding Cayman Islands Permits and Approvals

- EPA understands that some permits/approvals cannot be granted until the final inspection of the ex-vessel once vessel preparation is completed. Please forward to EPA copies of all permits and approvals prior to the ex-vessel’s departure to Grand Cayman:
 - The Coastal Works permit, which can only be issued once all remediation efforts have been completed and the Department of the Environment has inspected and approved the Kittiwake for

import to the Cayman Islands. **Agreed, this will be provided after all inspections on the Kittiwake have been completed and pass.**

- Approval from the port of authority of the Cayman Islands, which is an inclusion of granting the Coastal Works permit. **Completed, this is provided as Attachment 4.**
- Permit to sink a vessel, which can be issued when the Coastal Works permit has been approved. **Agreed, this will be provided after all inspections on the Kittiwake have been completed and pass.**

Sinking of the Vessel and Post Sinking Monitoring

- p.222, when discussing the stand-by vessel operations, EPA recommends that such operations include monitoring for any debris and/or sheen as the Kittiwake sinks. This could also be incorporated under the Scope of Work described on p.224. **Please see the updated Sinking Plan – Attachment 10, which addresses this matter. Our standby tug and barge will in fact be monitoring, as well as the CIDOE, for any sheen on the water during/after sinking, or any loose debris that might happen.**
- p.236, under section 2 “Debris Removal from time to time/On-going protection of the surrounding natural reefs,” the last bullet describes catastrophic disaster plans and the need for an emergency meeting to address the process, timing, and funding of the cleanup requirements should the Kittiwake “end up on shore or on the live coral reefs.” EPA recommends that a preliminary plan be in place prior to the sinking to ensure that a response to such an event would happen in a timely manner, especially given experiences with ex-vessels sunk as reefs off the Cayman Islands coast (the Russian Frigate and the Oro Verde), the potential for hurricanes (Hurricane Ivan in 2004), and the adverse weather that affect the site during the winter months (mid November through the end of April). **Please see our updated Maintenance Plan that addresses these matters, including times for responses, categories of maintenance work, salvage operations and the like. Attachment 12.**
- On p.39-40 of the “Letter of Application to the Department of Transportation for Transfer of Obsolete MARAD and Navy Vessels,” in the section captioned “Plan for use, monitoring and managing the ship reef including prevention of diver deaths,” the proposed monitoring for the Kittiwake reef is lacking a chemical monitoring component for potentially hazardous compounds/chemicals that could possibly leach from the ex-vessel. EPA recommends that the proposed monitoring plan for the Kittiwake reef include a chemical monitoring component. **As we have discussed on the phone and email with the EPA, this is a very broad statement. Our current understanding is that the specific chemical that you are referencing is PCB’s. We will not have a specific monitoring plan for PBC’s or any other chemicals. However, we will be monitoring the site and inspecting it on a monthly basis and any deterioration of the reef, Kittiwake or marine populations will be reported to the CIDOE as is standard practice here in Cayman. Our CIDOE is not requiring us to have a monitoring plan on the Kittiwake for chemicals.**
- “Appendix 6 – Guy Harvey Research Institute Monitoring Study.” A post-reefing chemical monitoring component is lacking. EPA recommends that the proposed monitoring plan for the Kittiwake reef include a post-reefing chemical monitoring component. **The reef/fish study will not undertake to have a chemical monitoring plan as a component of the program. This is a separate matter from our goals on the monitoring study and will not be included in this plan.**
- “Appendix 10 – Management and Maintenance Program – Kittiwake.” See preceding comment about chemical monitoring. **Duplicate**

Attachment 1 – Updated DMG Paint Remediation Plan
Attachment 2 – EPI PCB Risk Assessment Proposal
Attachment 3 – EPI Paint Sampling Plan
Attachment 4 – Port Authority approval on the site selection for the Kittiwake
Attachment 5 – Bay Bridge Scrapping Letter / Contingency Plan
Attachment 6 – Commonwealth of Virginia approval to clean the Kittiwake Hull in water
Guidelines for in-water hull cleaning
Letter to MARAD approving in-water hull cleaning in Virginia
Attachment 7 – QA/QC reports on paint samples from Kittiwake 2006 (121 samples)
Attachment 8 – Lab Results – Paint sample Batch #2 (2 samples) April 2007
Photo documentation on second samples
Attachment 9 – Souvenir items to be placed in boxes for export with the Kittiwake
Attachment 10 – Sinking Plan
Attachment 11 – Lab tests and photo documentation on anti fouling paint for TBT's
Attachment 12 – Maintenance Plan
Attachment 13 - Photo documentation on 121 paint samples (sent on a CD)